HEWLETT PACKARD

Logic Development Stations

MODEL 64100A
MODEL 64110A

Description

Models 64100A and 64110A Development Stations are versatile, expandable work stations for the HP 64000 Logic Development System. Either station may be used in a 64000 System cluster; as a stand-alone station for emulation, logic analysis, or software development; or as a terminal to a host computer. The transportable 64110A Development Station is well suited for applications requiring an independent benchtop instrument dedicated to logic analysis or emulation.

The Development Stations are the user interface to the powerful design and measurement subsystems of the HP 64000 System. A wide selection of software development, emulation, and hardware and software analysis subsystems are available to support any phase of designing, developing, and maintaining microprocessor-based systems. Assembler/linkers, Pascal compilers, and C compilers accommodate programming at the most efficient level. An easy-to-use, responsive editor streamlines software development and documentation. Software analysis and hardware analysis subsystems can be used interactively and can be combined with emulators for added flexibility in integrating, optimizing, and troubleshooting complex designs.

When configured in a hard-disc based system cluster, up to six HP 64100A or HP 64110A Development Stations can be used in any combination. In a cluster, all stations share the high performance hard-disc memory and printer. Clusters use a distributed processing scheme, made possible by the powerful host CPU resident in each Development Station.
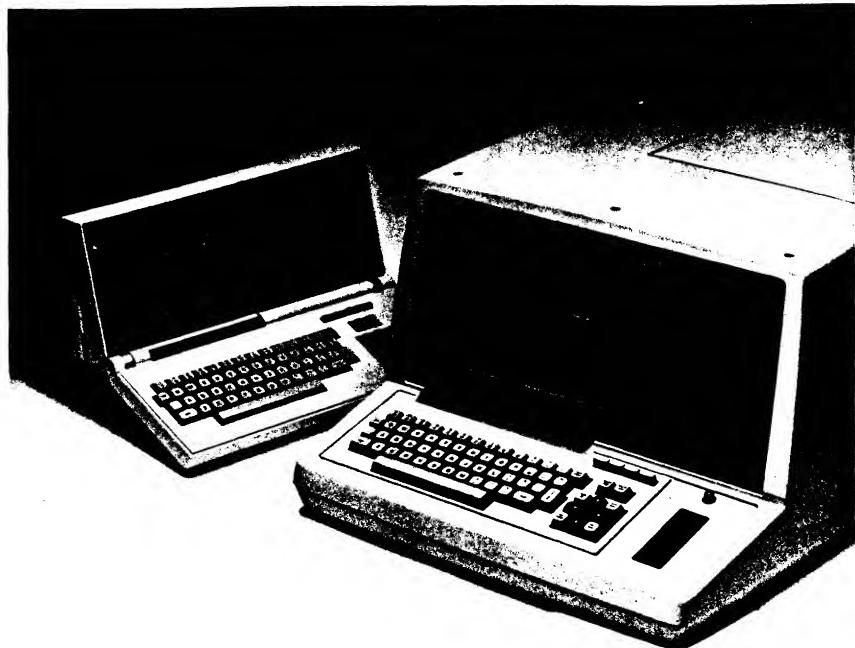
Features

■ Two versions of the Development Station offer capacity to suit the application needs.

■ Dual flexible disc drives as part of every HP 64110A station and as an option for HP 64100A stations are used for entering operating software and for economical storage and transfer medium of code and software.

■ Both stations are compatible in 64000 System clusters sharing high-performance hard disc and printer.

■ Transportable HP 64110A can be configured as sophisticated benchtop instrument for powerful development and troubleshooting aids in emulation, state analysis, timing analysis, software performance analysis, and interactive modes.

■ Effective interactive editor and syntax-driven softkeys for convenience and ease of use.
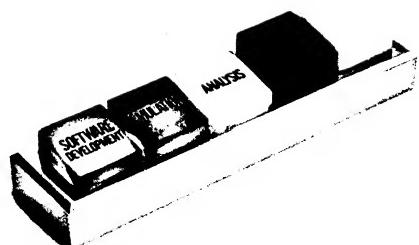
Consequently, system performance is not noticeably degraded by adding a new station to a cluster containing fewer than six stations. Either the 64110A Development Station or the 64100A Option 041 Development Station with flexible disc drives can be removed from the cluster for use as a stand-alone station for emulation and/or logic analysis. Any Development Station can also be configured as a terminal to an outside host computer, either in the supporting 64000 cluster, or separately.

Model 64110A Development Station, due to its compactness, is readily adapted for use as a benchtop instrument dedicated to emulation, hardware analysis, or software analysis. The anlayzers and emulators can be installed separately, or two or more subsystems can be used interactively, taking advantage of the powerful 64000 measurement systems for sophisticated troubleshooting.

Operating software is ordered separately. One set of software on flexible disc is required for each 64000 System cluster or stand-alone station.

Directed syntax, softkey operation makes the Development Stations friendly. Syntax errors are virtually eliminated as the software-driven softkeys present selections of appropriate commands at each decision point. Commands are entered by a keystroke rather than by typing cryptic code words, letter by letter. New users of the 64000 Logic Development System become proficient quickly, and experienced users work more effectively.

Convenience, ease of use, and the measurement power of the 64000 System help you produce a better microprocessor-based product in less time to gain a competitive edge.

Local Mass Storage

The local mass storage available for the 64100A Development Station is the optional dual 51/4-inch, flexible disc drives. All Model 64110A stations include the dual, flexible disc drives.

Either Model 64110A or Model 64100A Opt 041 Development Station with flexible disc drives may be used as a stand-alone station. Operation is controlled with directed-syntax softkeys. Emulation, analysis, and software development may be performed with system software operating directly from the flexible discs.

When development stations are used in a cluster with a hard-disc drive, at least one station must have a local mass storage device. Local mass storage is the medium for loading operating software during system initialization and updating system software. For maximum convenience in file backup and transporting user files, a local mass storage unit is recommended for each station in the cluster.

For the 64100A, the Flexible Disc Drives (Model 64941A) consists of a drive mechanism and a control card. The control card is installed in any available card cage slot. The flexible disc transport meachanism is installed in the right front of a station. In the 64110A, the disc drive circuits are built in the station and do not require an additional circuit card.

- Dual flexible discs
- Softkeys
- Adjustable keyboard
- Optional accessory storage pouch
- Adjustable legs
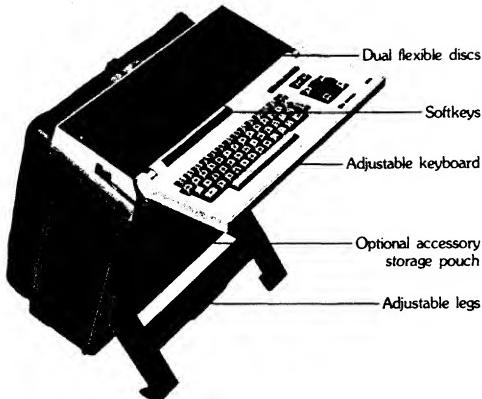
Model 64110A has a fold-up keyboard and adjustable cabinet legs to adapt the station to your work setting, for bench use, rack mounting, or even standing on the floor. The bright, high-resolution display provides easy viewing. An attached storage pouch for probes and accessories is available as an option.

Interfaces

n RS-232-C (V.24) port on the rear .nel of the station provides a communication link to external serial devices. Transmission is at half or full duplex from 50 to 9600 baud using an internal clock. Character length may be set to 5, 6, 7, or 8 bits with 1, 1.5, or 2 stop bits. Parity may be set as odd, even, or none. Baud rate factor is X16, and transmission format is ASCII.

The HP-IB interface allows the Development Stations to operate in an HP 64000 cluster or in an HP-IB system as a talk only or addressable unit.

Host Memory

Each development station has 160k bytes of internal memory available to the 16-bit host processor. The 32k-byte ROM memory contains bootstrap programs, some frequently used utilities, and self-test software for the development station. Program memory is provided by 128k bytes of dynamic RAM. CRT display memory is part of the program memory, to ⊐ilitate the rapid display update .equired by such features as tracking softkeys and a screen-mode editor.

Card Cage

Ten option card slots are available for installing analysis, development, or emulation subsystem cards in Model 64100A Development Station. Model 64110A offers five option card slots.
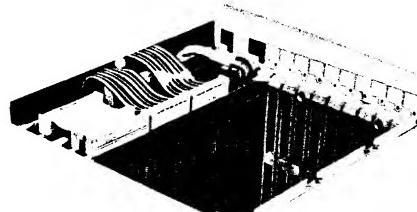
64100A card cage.

An optimal mix of speed and flexibility is a consequence of the multibus architecture of the Development Station. A mainframe bus interfaces the 16-bit host processor and the card positions. Communication between option cards is on a separate, high-speed bus, eliminating conflicts between the host operating system and the resident subsystem(s).
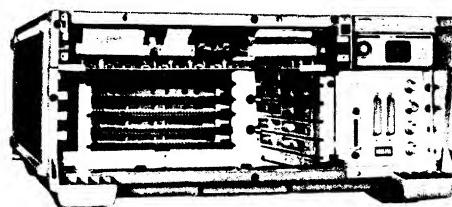
64110A card cage.

Specifications

GENERAL, 64100A
Display: 12-inch raster-scan, electromagnetic-deflection CRT.
CRT Area: 25 rows by 80 columns.
Character set: 128-character ASCII, upper and lower case.
Power: 110, 220 Vac, -15% to +15%, 48 to 66 Hz single phase; 675 VA max.

Current Available

Voltage	+5 V	-3 V	-5 V
Amperage	40 A	25 A	30 A

Dimensions: see outline drawing.
Weight: net, 34 kg (75 lbs); shipping, 43 kg (95 lbs).

GENERAL, 64110A
Display: 9-inch raster-scan, electromagnetic-deflection CRT.
CRT Area: 25 rows by 80 columns.
Character set: 128-character ASCII, upper and lower case.
Power: 110, 220 Vac, -15% to +15%; 48 to 66 Hz single phase; 550 VA max.

Current Available

Voltage	+5 V	-3 V	-5 V
Amperage	24.3 A	20 A*	20 A*

* Combined amperage of the -3V and -5V supplies must not exceed 35A.
Dimensions: see outline drawing.
Weight: net, 25 kg (55 lbs); shipping, 43 kg (95 lbs).

FLEXIBLE DISC DRIVE
Recording
  HP Physical Track Format
  Recording Mode: Modified Frequency Modulated
  Rotational Speed: 300 rpm.
  Bit Density: 5456 BPI (at Track 34).
  Tracks per Inch: 48.
  Sides per Disc: 2.
  Tracks per Side: 34 (+ 1 spare).
  Sectors per Track: 16.
  Bytes per Sector: 256.
  Bytes per Disc: 278,528 (formatted).
  Maximum Number of Files: 128.
Access Time
  Track to Track Seek: 6 ms max.
  Head Settling Time: 15 ms max.
  Spindle Motor Start Time: 250 ms max.

ENVIRONMENTAL
Temperature: (64100A) operating, 0° to +55°C (+32° to +131°F); nonoperating, -48° to +75°C (-40° to 167°F); (64100A/041 or 64110A) operating, +10° to +40°C (+50° to +104°F); nonoperating, -40° to +71°C (-40° to +160°F).
Altitude: operating, up to 4600 m (15 000 ft); nonoperating, up to 15 300 m (50 000 ft).
Relative Humidity: (64100A) 5 to 95%, noncondensing; (64100A/041 or 64110A) 20 to 80%, noncondensing.

ACCESSORIES SUPPLIED
Model 64100A: one 10833B 2 m (6.5 ft) HP-IB cable, one 2.3 m (7.5 ft) power cord, service and operating manuals, five binders, and two sets of binder labels.
Model 64110A: one 10833B 2 m (6.5 ft) HP-IB cable, one 2.3 m (7.5 ft) power cord, service and operating manuals, four flexible discs, two disc holders, five binders, and two sets of binder labels.

Model 64110A
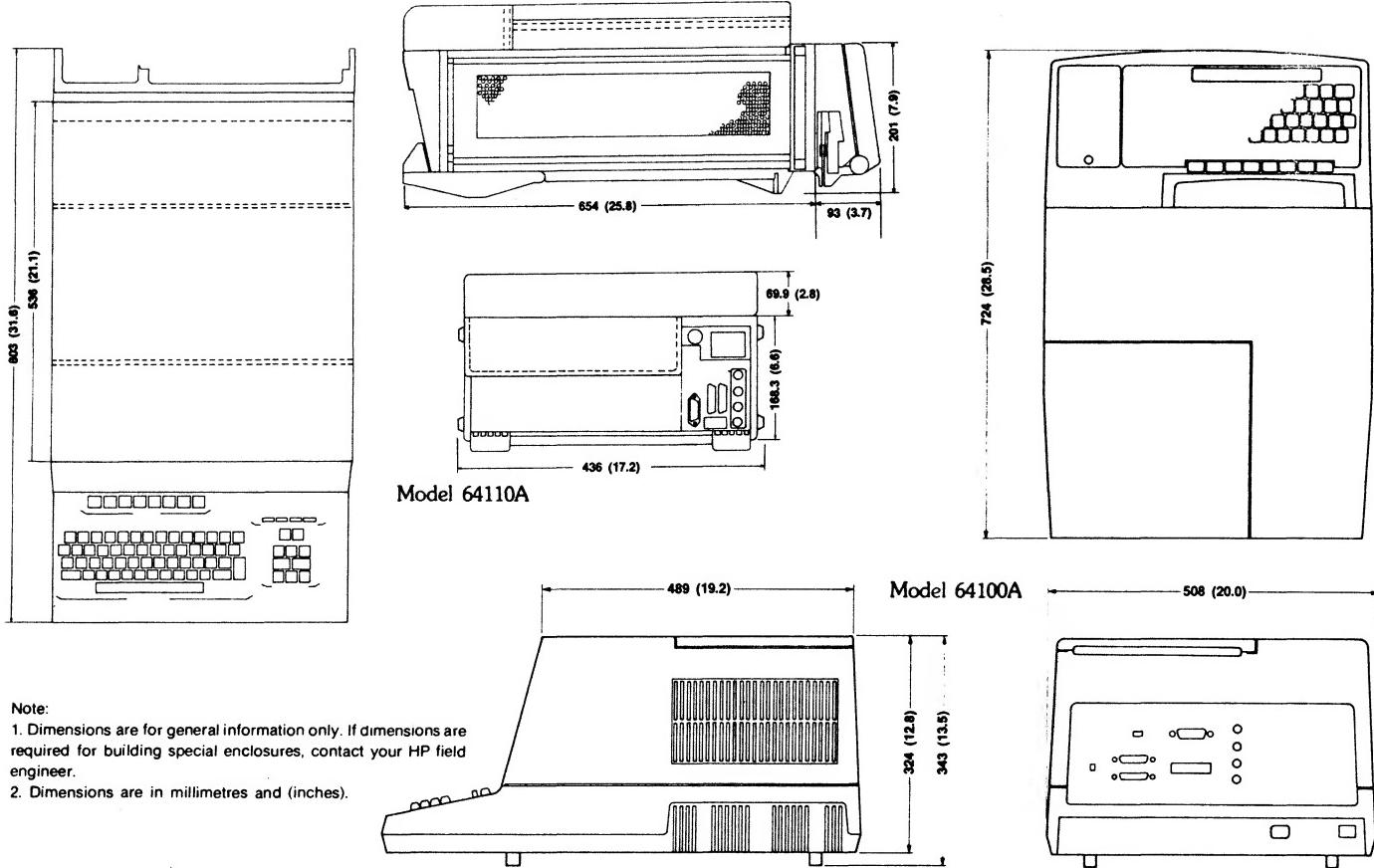
Model 64100A

Note:
1. Dimensions are for general information only. If dimensions are required for building special enclosures, contact your HP field engineer.
2. Dimensions are in millimetres and (inches).

Ordering Information

Model 64100A Logic Development Station
   Option 041: Includes Dual 5¼-in. Flexible Disc Unit
Model 64110A Development Station
   Option 034: Accessories Pouch
Model 64100AF Operating System Software
   on flexible disc for 64100A or 64110A

COMPONENTS
Model 64941A Dual 5¼-in. Flexible Disc Unit

ACCESSORIES AVAILABLE
Development Station Cart, Model 64030A
Provides excellent mobility from one lab to another; high quality castors. Storage shelf provided below table-top. Dimensions 660H x 610W x 762D mm (26 x 24 x 30 in.)
Blank Flexible Discs, Model 92190A
5¼-in. Double Sided Flexible Discs in box of 10, each with own Protective Envelope. (Quantity discounts available.)
Portable Album File, Model 92194G
Provides storage for up to twenty 5¼-in. Flexible Discs in a Snap-Lock Vinyl Album. (Quantity discounts available.)

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For more information call your local HP Sales Office or nearest Regional Office: Eastern (301) 258-2000; Midwestern (312) 255-9800; Southern (404) 955-1500; Western (213) 877-1282; Canadian (416) 678-9430. Ask the operator for instrument Sales. Or, write: Hewlett-Packard, 1501 Page Mill Road, Palo Alto, CA 94304. In Europe: Hewlett-Packard S.A., 7, rue du Bois-du-Lan, P.O. Box CH-1217 Meyrin 2, Geneva, Switzerland. In Japan: Yokogawa-Hewlett-Packard Ltd., 29-21, Takaido-Higashi 3-chome, Suginami-Ku, Tokyo, 168.